

REMARKS

Favorable consideration and allowance are requested for claims 7-30 in view of the following remarks.

Status of the Application

Claims 7-30 are present in this application. Claims 7-26 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 7-30 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,208,915 to Schütte *et al.* (the “Schütte patent”).

Rejection under 35 U.S.C. § 101

According to the Examiner, claims 7-26 “are directed to a mathematical algorithm or abstract idea without a practical application.” The Examiner cited MPEP § 2106 in support of the rejection. The same rejection was made in the Office Action dated March 1, 2005; this rejection was addressed by Applicants in their May 31, 2005 Reply. However, it appears that Applicants’ arguments concerning this rejection were not considered in the August 5, 2005 Office Action; in particular, the “Office Action Summary” page does not indicate that the instant Office Action is responsive to any prior communication by Applicants.

As stated in Applicants’ May 31, 2005 Reply, Applicants respectfully submit that the rejection under 35 U.S.C. § 101 is misplaced. MPEP § 2106 requires a “review [of] the complete specification, including the detailed description of the invention, any specific embodiments that have been disclosed, the claims and any specific, substantial, and credible utilities that have been

asserted for the invention.” Based on such a review, it is readily apparent that the “specific, substantial, and credible utilities” for the invention set forth in independent claims 7 and 13 are for “selecting a solution to a linear optimization problem for fuel-optimized selection of a configuration of thrusters on a spacecraft.” The result of the calculations set forth in the independent claims unquestionably provides a “useful, concrete, and tangible result.” *See generally* State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F. 3d 1368; 47 U.S.P.Q.2d 1596 (Fed. Cir. 1998).

In particular, the rejection notes “that the preamble to claim 1 [presumably referring to claim 7] is given no patentable weight as the elements recited therein are not referred to in the body of this method claim.” In response, Applicants submit that “said solution” in the body of claim 7 is to the linear optimization problem for the fuel-optimized selection of the configuration of thrusters. For these reasons Applicants respectfully submit that claims 7 and 13 are directed to statutory subject matter, and, therefore, request that the rejection of these claims be withdrawn. As claims 8-12 and 14-26 depend either directly or indirectly from claims 7 and 13, respectively, Applicants respectfully request that the rejection of these claims be withdrawn as well. In addition, Applicants respectfully assert that each of newly added claims 27-30 also constitutes statutory subject matter.

Rejection under 35 U.S.C. § 102(b)

According to the Examiner, claims 7-30 are anticipated by the Schütte patent. In particular, the Examiner stated that “column 4 [of the Schütte patent] describes the linear optimization of thrusters on a spacecraft for fuel consumption.”

In response, Applicants respectfully assert that Schütte patent describes a method for a “minimum-fuel, computer-assisted control of an optionally determined number of thrusters, arranged as desired on a spacecraft, wherein . . . a minimum-fuel control vector . . . with exclusively non-negative control values for all specified thrusters is formed with the aid of a dual simplex algorithm.” Schütte patent, col. 3, lines 40-45. In contrast, the claimed method and apparatus of the present invention have several advantages over the simplex method. *See, e.g.*, page 13 of the “cleaned up” version of the specification.

In particular, Applicants believe that the scaled iteration gradient recited in claims 7-12, 14-27, and 29 of the present invention is not disclosed in the Schütte patent. For this reason, Applicants state that claims 7-12, 14-27, and 29 are not anticipated by the Schütte patent, and, therefore, respectfully request that the rejection of these claims be withdrawn.

In addition, Applicants believe that the efficiency criterion recited in at least claims 13, 28, and 30 of the present invention is not disclosed in the Schütte patent. For this reason, Applicants state that claims 13, 28, and 30 are

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not anticipated by the Schütte patent, and, therefore, respectfully request that the rejection of these claims be withdrawn.

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If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket No. 010408.52553US).

Respectfully submitted,

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